# Minutes & Slides from Proton Driver RF Meeting June 8, 2004

*(G.W. Foster)*

**Subject: Plans for YIG tuner Tests**

Attendees (partial list): Ding Sun, Bob Kustom, Dave Wildman, Ralph Pasquinelli, Iouri Terechkine, J. Reid, Marcus Huening, Pierre Bauer. Al Moretti, G.W. Foster.

**** Next Meeting June 15th ****

## MINUTES

1) Dave Wildman has the metal parts ready for the low-power coax tuner tests. Two vendors claim a shipping date of next Friday (11th June) for 20 YIG cores each. We'll see. High power tests at 1300 MHz will require a WR650 waveguide-to-coax transition which had not been ordered as of the meeting but subsequently was.

Some discussion of what accuracy can be obtained for the absorption measurement with a network analyzer. Ralph felt that maybe 1% accuracy was achievable after calibration. This would be adequate in view of the 4% loss (0.2dB) target spec for the tuner. High-power testing presents other issues.

2) Iouri Terechkine described preparations for the waveguide tuner tests. Several YIG slabs 2" x 6" x 0.8" will be placed at the edges of a (non-reduced height) WR650 shorted stub waveguide. The 0.8" thickness is a little more than optimal and the simulation predicts a good phase shift but some higher-order spatial modes. Eventually the slabs will be cut or ground down to 0.5" thickness which should be free of higher order modes and easier to cool as well. The initial bias magnet to be used is one that Jim Volk has set up at the MS-7 power supply building.

Some discussion ensued regarding metallizing, brazing, and/or gluing the ferrite to the waveguide. Metallization is desirable since it removes RF currents from the glue which might be used to attach the bricks. Brazing is better but differential thermal expansion is an issue.

4) Investigation of possible RF/Cryomodule test sites was discussed. A walk-through of the leading candidate areas was performed by H. Edwards, GW Foster, J. Theilacker, J. Volk, G. Apollinari, M. Huening, and I. Terechkine. The segments of the M-East & M-P beam lines, inside the Meson Cryo building, seem to be the most promising. Initial cryogenics capable of supporting ~2 cryomodules could be obtained relatively easily in the M-East beamline using mostly existing piping, and eventually a new high-efficiency refrigerator could be installed in this area.

3) Marcus Huening reported a request from DESY for "drawings" of the YIG tuners. General merriment ensued.